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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference PU02105-PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/14006	International filing date (day/month/year) 10.12.2003	Priority date (day/month/year) 11.12.2002
International Patent Classification (IPC) or both national classification and IPC C22B5/00		
Applicant AMERSHAM BIOSCIENCES AB et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
 - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 11.06.2004	Date of completion of this report 11.11.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Tiercet, M Telephone No. +49 89 2399-8977 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/14006

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-5 as originally filed

Claims, Numbers

1-10 received on 04.11.2004 with letter of 01.11.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/14006**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/14006

Ad V:

Compared to the documents cited in the search report, WO-A-0067293 and WO-A-9841323 which describe target slides for use in mass spectroscopy comprising a hydrophobic sheet having pits for droplets of analyte overlying a substrate, independant claims 1 and 5 as novel feature prescribe a maximum pit diameter smaller than any droplet diameter. This feature ensures that the pit traps the droplet by surface effect and not by gravity as in the prior art, ensuring a residue after evaporation confined to a small area. None of the documents mentioned in the search report mentions this specific problem or could suggest the solution, so that claims 1 and 5 as non-obvious alternatives fulfill the conditions of Article 33(2) and 33(3) PCT. The industrial applicability is evident (Article 33(4) PCT).

Claims

1. Method of preparing a target slide for mass spectroscopy analysis comprising the steps of:
making at least one pit (9a-9n) which is less than 1 mm wide and having a wall (13a-13n) and
a pit bottom (15a-15n) in a sample receiving surface (5) of the substrate (3) of a target slide
5 (1), wherein there is a rim (11a-11n) between said sample receiving surface and said wall
(13a-13n); and,
making said sample receiving surface (5) and the rim (11a-11n) of said at least one pit (9a-9n)
more hydrophobic than the substrate (3) of said target slide.
- 10 2. Method in accordance with claim 1 characterised by the steps of forming said at least one
pit (9a-9n) in said slide and coating the rim (11a-11n) of said at least one pit (9a-9n) with a
layer of hydrophobic material (17).
3. Method in accordance with any of the previous claims characterised by the step of making
15 the pit bottom(s) (15a-15n) of said at least one pit (9a-9n) more hydrophobic than the
substrate (3) of said target slide.
4. Target slide for use in a mass spectrometer characterised in that it comprises a substrate (3)
with a sample receiving surface (5) comprising at least one pit (9a-9n) which is less than 1
20 mm wide and having a wall (13a-13n) and a pit bottom (15a-15n) in said sample receiving
surface (5), wherein there is a rim (11a-11n) between said sample receiving surface and said
wall (13a-13n), wherein said sample receiving surface (5) and the rim (11a-11n) of said at
least one pit (9a-9n) are more hydrophobic than the substrate (3).
- 25 5. Target slide in accordance with claim 4 characterised in that said at least one pit is more
than 0.05 mm wide.
6. Target slide in accordance with any of claims 4-5 characterised in that said at least one pit
(9a-9n) is less than 100 μm deep.
- 30 7. Target slide in accordance with any of claims 4-6 characterised in that said at least one pit
(9a-9n) is more than 5 μm deep.

8. Target slide in accordance with any of claims 4-7 characterised in that said target slide comprises a substrate (3) of conducting material coated with a layer (17) of hydrophobic material.

5 9. Target slide in accordance with claim 8 characterised in that said layer (17) of hydrophobic material is less than 0.1 mm thick.

10. Target slide in accordance with any of claims 4-9 characterised in that said pit bottom (15a-15n) is more hydrophobic than the substrate (3).